

Short Communication:

A Retrospective Study on Patients Bitten or Stung by Arthropods Admitted to Major Hospitals in Jaffna District

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Abstract – Though a considerable number of arthropod stung or bitten patients seek medical assistance in Jaffna District, only few literatures are available. With this background, this retrospective study was designed to study the holistic pattern of arthropod stings or bites reported in Jaffna District. This institutional based retrospective descriptive study was carried out at major hospitals in Jaffna District. Basic demographic data, type of arthropods, site of bite and other recorded clinical manifestations were extracted to a data sheet from the BHTs for a period of one year. The data were analyzed using statistical software SPSS version 21. Ethical clearance was obtained from the Ethical Review Committee of the Faculty of Medicine, University of Jaffna. During the study period 1030 patients were reported to the Base Hospitals in the Jaffna District and the Teaching Hospital, Jaffna. Among them 57% were male and the age ranges from 1 to 86 years. Majority of them were from the MOH divisions of Chavakacheri (30%) and Tellipalai (22%) followed by Point Pedro (18%). Most of them had unknown bite (36%) followed by wasp stings (23%) and white scorpion (15%) stings. Legs (36%) were the predominant site of bite followed by arm (31%) and head and neck (15)%. This study reveals 72% of the patients reported pain whereas 44% had swelling at the site of bite. Most of the patients (78%) stayed in the hospital for one day and others (22%) stayed for two days, and no fatality was recorded during the study period. In conclusion, arthropod stings or bites need not be neglected anymore and further in depth studies of arthropod biology and risk factors are paramount in order to help the health authorities in the primary prevention.

Keywords: arthropod bite, arthropod sting, wasp, white scorpion

1. BACKGROUND

There are about 11,500 arthropods distributed in Sri Lanka and among them few bite or sting to human being attributed serious consequences (Kularatne *et al*, 2018) in the country including Jaffna District (Dinamithra *et al*, 2013, Nishan *et al*, 2014, Thakshagini *et al*, 2014, Jeyakanth *et al*, 2015, Ratnayake *et al*, 2016, Sathiadas *et al*, 2017, Pirasath *et al*, 2019). Scorpions, hornets, bees, spiders and centipedes are the reported offending arthropods responsible for serious stings and bites in Sri Lanka (Jeyakanth *et al*, 2015, Ratnayake *et al*, 2016, Kularatne *et al*, 2014, Kularatne *et al*, 2018). There are considerable numbers of arthropod stung or bitten patients seek medical assistance in Jaffna District (Dinamithra *et al*, 2013, Thakshagini *et al*, 2014, Jeyakanth *et al*, 2015, Ratnayake *et al*, 2016, Sathiadas *et al*, 2017, Pirasath *et al*, 2019) and few of them were serious in nature. Though

a considerable number of patients reported to hospital seeking medical assistance for arthropod stings or bites, these conditions are neglected. However, pain and panic of the patients, the concern of the family members, absenteeism to school and work, travel to the hospital and impact on at least some extent of economic loss are unavoidable. Hence, a need arises to study the holistic pattern of arthropod stings or bites reported in Jaffna District that are reported discretely. In turn, this will be helpful the health authorities to optimize the resource and draw the strategies in the primary prevention of arthropod stings or bites in the region. With this background this retrospective study was designed to study all the possible descriptors available in the Bed Head Tickets (BHT) of entire arthropod stings or bites reported to the Base Hospitals in the Jaffna District and the Teaching Hospital, Jaffna.

2. MATERIALS AND METHODS

This institutional based retrospective study was carried out at the Base Hospitals Tellipalai, PointPedro, Chavakacheri, Kayts and the Teaching Hospital, Jaffna. This study utilized the available data from all the BHTs of the patients stung or bitten by arthropods for one year i.e. July 2019 to July 2020. Basic demographic data, type of arthropods, site of bite and other recorded clinical manifestations were extracted to a data sheet. The data were analyzed using statistical software SPSS version 21 and presented in descriptive manner. Ethical clearance was obtained from the Ethical Review Committee of the Faculty of Medicine, University of Jaffna. Permissions from Medical Superintendents of Base Hospitals and the Teaching Hospital, Jaffna were obtained and all the ethical procedures were followed.

3. RESULTS AND DISCUSSION

During the study period, 1030 patients were reported to the Base Hospitals in the Jaffna District and the Teaching Hospital, Jaffna. Among them 57% were male and the age ranges from 1year to 86 years (Table 1). Almost a similar pattern was reported by Kularatne *et al* (Kularatne *et al*, 2018) in a study carried out in the North Western province of Sri Lanka.

Table 1 shows the Medical Officer of Health (MOH) divisions from where the patients were reported. Majority of the patients were from the MOH divisions of Chavakacheri (30%) and Tellipalai (22%) followed by PointPedro (18%). Further, exploratory study has to be carried out to find out the reasons for this variation.

Table 2 illustrates the type of arthropod by which the patients were bitten. Majority of the patients underwent unknown bite (36%) whereas among the identified bites or stings, wasp stings (23%) were more predominant followed by white scorpion (15%). This results are comparable with a study carried out by Kularatne *et al* (Kularatne *et al*, 2018) in North Western province of Sri Lanka where majority

were hymenoptera (57%) where wasp belongs to. However, the reports available from Jaffna District reveals higher number in white scorpion stings (Kularantne *et al*, 2014, Thakshagini *et al*, 2014, Ratnayake, 2016, Sathiadas *et al*, 2017, Pirasath *et al*, 2019) compare to wasps and bee stings (Dinamithra *et al*, 2013, Nishan *et al*, 2014).

Table 1: Background details of the patients bitten or stung by arthropods in Jaffna District (July 2019- July 2020)

Variable	Categories	Percentage (N- 1030)
Sex	Male	57%
	Female	43%
Age		34.23 ± 21.032 yrs (Range 01- 86 yrs)
MOH divisions	Chankanai	02%
	Chavakacheri	30%
	Jaffna	03%
	Karainagar	01%
	Karaveddy	08%
	Kopay	03%
	Kayts	02%
	Maruthankerny	02%
	Nallur	01%
	PointPedro	18%
	Sandilippay	01%
	Tellipalai	22%
	Uduvil	01%
	Velanai	05%

Table 2: Description of arthropod type, site of bite and recorded clinical manifestation of the patients bitten or stung by arthropods in Jaffna District (July 2019- July 2020)

Variable	Category	Percentage (N-1030)
Type of arthropod	Black scorpion	07%
	Bee	03%
	Centipedes	10%
	Spider	06%
	Wasp	23%
	White scorpion	15%
	Unknown bite	36%
Site of bite	Head and Neck	15%
	Arm	31%
	Face	06%
	Leg	36%
	Trunk	12%
Pain	Yes	72%
	No	28%
Swelling	Yes	44%
	No	56%

Most of the patients were bitten or stung at leg (36%) followed by arm (31%) and head and neck (15)%. In the study carried out by Kularatne *et al* (Kularatne *et al*, 2018) in North Western province of Sri Lanka it has been reported that bite or sting at lower limb (46%) was predominant which was comparable to our study. This study reveals 72% of the patients reported that they were having pain whereas 44% had swelling at the site of bite. In the above same study carried out by Kularatne *et al* (Kularatne *et al*, 2018) pain and swelling were reported as 55% and 28%, which indicates though the magnitude is higher in our study, the pattern was similar. The hospital stay of the patients was short. The majority (78%) stayed for one day and others (22%) stayed up to two days. Moreover, no fatality due to bite or sting of arthropods was reported during the study period.

In conclusion, a considerable number of arthropod stings or bites is reported to the major hospitals in Jaffna District. This warrant for further in depth studies of arthropod biology and risk factors, in order to help the health authorities in the primary prevention.

3. ACKNOWLEDGEMENT

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